

PROPOSED AMENDMENTS TO THE SEWAGE  
HANDLING AND DISPOSAL REGULATIONS

**12 VAC 5-610-120. Definitions.** The following words and terms when used in this chapter shall have the following meanings, unless the context clearly indicates otherwise:

"Agent" means a legally authorized representative of the owner.

"Alluvial soil" means a soil developing from recently deposited alluvium and exhibiting essentially no horizon development or modification of the recently deposited materials.

"Alluvium" means mineral materials, either weathered or unweathered, that are transported by flowing water and deposited or redeposited in a flood-plain or marine terrace.

"Aquifer" means water-bearing portion of a geologic formation that transmits water.

"Certification letter" means a letter issued by the commissioner, in lieu of a construction permit, which identifies a specific site and recognizes the appropriateness of the site for an onsite wastewater disposal system.

"Colluvial soil" means a soil developing from recently deposited colluvium and exhibiting essentially no horizon development or modification of the recently deposited materials.

"Colluvium" means an accumulation of soil material, or a mixture of stone fragments and soil material, deposited at the base of slopes or in depressional areas, primarily by gravity.

"Commissioner" means the State Health Commissioner or his subordinate who has been delegated powers in accordance with subdivision 2 of 12VAC5-610-40.

"Cr horizon" means weathered or soft bedrock and is used to indicate root restrictive layers or bedrock or saprolite.

"Dilution area" means the land immediately adjacent to and down gradient, in the direction of ground water flow, from a mass sewage disposal system, which is provided for the purpose of diluting nitrogen, or other nutrients occurring in wastewater, with ambient ground water, in order to assure compliance with nutrient standards contained in this chapter.

"District health department" means a consolidation of local health departments as authorized in §32.1-31 C of the Code of Virginia.

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"Division" means the Division of Onsite Sewage and Water Services, Office of Environmental Health Services, State Health Department or its administrative successor.

"Existing construction" (with failing sewage disposal systems) means an existing structure where the sewage disposal system serving the structure has failed or is currently in violation of state law or regulations and requires correction.

"General approval" means approval granted to systems which are proven and tested in accordance with Article 2 (12VAC5-610-441 et seq.) of Part II of this chapter.

"Grandfathered lot" means:

1. Any lot upon which no permit has been issued and which is in a subdivision approved by the department prior to July 1, 2000, in accordance with a local subdivision ordinance. Individual lots may or may not have been evaluated; or
2. Any lot, parcel, or portion thereof with a previously issued permit or a specific written approval (not including a certification letter) from the department.

"Gray color" means a chroma-2 or less on the Munsell Color Chart.

"Impervious strata" means soil or soil materials with an estimated or measured percolation rate in excess of 120 minutes per inch.

"Local health department" means a branch of the State Health Department established in each city and county in accordance with §32.1-30 of the Code of Virginia.

"Mass sewage disposal system" means a sewage disposal system or systems which will discharge effluent to a single absorption area or multiple absorption areas with or without combined flows, such that the loading rate applied to any acre, as determined by the department, exceeds 1,200 gallons per day.

"Mineral soil" means a soil consisting predominantly of, and having its properties determined predominantly by, mineral matter. A mineral soil usually contains less than 20% organic matter, but it may contain an organic surface layer up to 12 inches thick.

"New construction" means construction of a building for which a building permit is required.

"Office" means the Office of Environmental Health Services, State Health Department.

"Owner" means the Commonwealth or any of its political subdivisions, including sanitary districts, sanitation district commissions and authorities, any individual, any group of

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individuals acting individually or as a group, or any public or private institution, corporation, company, partnership, firm or association which owns or proposes to own a sewerage system or treatment works.

"Person" means an individual, corporation, partnership, association or any other legal entity.

"Previously issued permit" means any permit issued prior to July 1, 2000, and in accordance with the regulations in effect at the time the permit was issued. There is no distinction between an expired permit and one that has been continually renewed.

"Pump and haul" means any unusual circumstance wherein sewage is permitted to be transported by vehicle to a point of disposal. The term "pump and haul" includes all facilities and appurtenances necessary to collect and store the sewage for handling by a contractor having a valid sewage handling permit.

"Rock" or "bedrock" means continuous, coherent, lithologic material that has relative hardness depending on the degree of weathering. Bedrock has characteristics such as strike, dip, jointing, and lithological compositions. Structure and water movement are rock controlled. Bedrock grinds with an auger, and mechanical penetration is more difficult or prevented as the material gets harder.

"Rock fragments" means discrete, coherent pieces of rock or mineral that are 2 mm in diameter or larger and have a general lithologic composition.

"Saprolite" means material weathered from igneous or metamorphic rock, without soil structure, and with remnant structure and fabric of the parent rock which is soft in place and can be penetrated easily with an auger.

"Secondary effluent" means effluent treated to reduce five-day biochemical oxygen demand to 30 mg/l or less, total suspended solids to 30 mg/l or less, and fats, oils, and grease to less than 5 mg/l.

"Septic tank effluent" means effluent characterized by a five-day biochemical oxygen demand between 120 and 200 mg/l; total suspended solids between 70 and 150 mg/l; fats, oils, and grease of 30 mg/l or less; and having no other toxic, hazardous, or constituents not routinely found in residential wastewater flows.

"Septage" means the mat of grease and scum on the surface of septic tanks, the accumulated sludge at the bottom of tanks and the sewage present at the time of pumping.

"Sewage" means water-carried and nonwater-carried human excrement, kitchen, laundry, shower, bath or lavatory wastes separately or together with such underground, surface,

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storm or other water and liquid industrial wastes as may be present from residences, buildings, vehicles, industrial establishments or other places.

"Sewage disposal system" means a sewerage system or treatment works designed not to result in a point source discharge.

"Sewage handler" means any person who removes or contracts to remove and transports by vehicle the contents of any septic tank, sewage treatment plant, privy, holding tank, portable toilet or any sewage, septage or sewage sludges which have been processed to meet acceptable treatment standards as defined in this chapter or the Sewage Regulations (12VAC5-580-10 et seq.).

"Sewage handling" means the vehicular conveyance of sewage (See "Transportation" in §32.1-163 of the Code of Virginia).

"Sewerage system" means pipe lines or conduits, pumping stations and force mains and all other construction, devices and appliances appurtenant thereto, used for the collection and conveyance of sewage to a treatment works or point of ultimate disposal.

"Shrink-swell soils" means soils with horizons that contain montmorillonite and other clays that excessively shrink upon drying and swell upon wetting.

"Sink hole" means a depression in the topography without a surface outlet for drainage from the low point. Sink holes are common in areas containing limestone and generally result from the collapse of solution cavities.

"Soil" means the weathered mineral and organic fraction of the earth's regolith, which is less than or equal to 2.0 mm in size as observed in place. Soil comprises sands, silts or clays or combinations of these textured components and may contain larger aggregate materials such as gravel, cobbles, stones or channers or precipitates from aqueous solution. Soil includes the A, O, B, C, and E horizons.

"Soil horizon" means a layer of soil or soil material approximately parallel to the land surface and different from adjacent genetically related layers in physical, chemical, and biological properties or characteristics such as color, structure, texture, consistency, kinds and numbers of organisms present, degree of acidity or alkalinity, etc.

"Subdivision" means multiple building lots derived from a parcel or parcels of land.

"Subsurface soil absorption" means a process which utilizes the soil to treat and dispose of effluent from a treatment works. (Also see "Subsurface drainfield" in §32.1-163 of the Code of Virginia).

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"Treatment works" means any device or system used in the storage, treatment, disposal or reclamation of sewage or combinations of sewage and industrial wastes, including but not limited to pumping, power and other equipment and appurtenances, septic tanks and any works, including land, that are or will be (i) an integral part of the treatment process or (ii) used for ultimate disposal of residues or effluent resulting from such treatment.

**12 VAC 5-610-449. Special requirements for mass sewage disposal systems.**

- A. The criteria contained in this article apply to mass sewage disposal systems and shall supersede any other conflicting criteria contained elsewhere in this chapter. The purpose of this article is to identify systems with average flows over 750 gallons per day and because of the combination of factors associated with their flows, wastewater characteristics, or hydrologic considerations, which have an increased risk of hydraulic failure (i.e., sewage surfacing) or present additional risks to ground water contamination. Examples of facilities that may be served by mass sewage disposal systems regardless of the system configuration are condominiums, shopping centers, commercial development, and massed individual (or combined systems) when proposed by a single developer. Note: this includes subdivisions. Examples of systems that are not considered mass drainfields are existing single family dwelling lots and new single family dwelling lots, which are not developed as part of a subdivision.
- B. Ownership. Mass sewage disposal systems shall have a single owner as described in 12 VAC 5-610-253.5 I. To implement the provisions of this Article, the requirements for mass sewage disposal systems shall apply to new subdivisions that utilize individual onsite sewage systems to serve individual single-family dwellings when subdivision approval is sought from the Department. The owner of the proposed subdivision shall be responsible for complying with the requirements of this Article. In those cases where a massing of individual systems serving residential unit has resulted in a requirement to comply with this section, the single-owner requirement shall deemed to be met so long as each system is located on the same property as the dwelling it serves and so long as all dwellings units are single-family detached units. In such cases, if treatment is required in order to comply with the nitrate requirements of this section each owner shall be responsible for monitoring his or her system in accordance with the operation permit.
- C. Uniform distribution. All mass sewage disposal systems shall be designed to provide uniform distribution. Mass sewage disposal systems shall not use a distribution box.
- D. Sewage Flows. Sewage systems serving single family dwellings shall be designed on the basis of two persons per bedroom using the equation  $Q = [40 + 35 * (\text{the number of persons})]$ .
1. For dwellings in excess of 2000 square feet of heated living space, sewage flow designs shall be increased at least 50 gallons per day for each additional 500 square feet of heated living space.

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2. Sewage systems shall be designed to reflect actual water use, including peak daily flow. The design flow should consider additional fixtures, hot tubs, or other pertinent factors as necessary.
  3. Sewage flows for non-residential facilities shall be designed in consultation with a professional engineer licensed in the Commonwealth of Virginia. The sewage flow shall be determined using available flow data, occupancy, operation patterns, and other measured data. Performance monitoring may be required to assure that the design flow accurately reflects the sewage flow and strength predicted.
  4. AOSEs and Professional Engineers shall account for peak daily flows and flow variation before selecting a pretreatment device that disperses secondary or better effluent. Peak flow shall have a minimum peak flow factor of 1.8.
  5. Professional engineers may propose design flows less than what is prescribed in this section. When a professional engineer proposes a design flow less than the figure specified by this section, then a conditional permit in accordance with 12 VAC 5-610-250 is required. Performance monitoring may be required to assure that the system is operated in accordance with the design flow and strength predicted by the engineer. Nothing shall prevent a professional engineer or AOSE from proposing a design flow in excess of the figures required by this section when professional judgement dictates that a greater design flow is best suited.
- E. Footprint and Absorption Area. The minimum footprint area, which can be used as an absorption area for a Mass Sewage Disposal System, shall be determined in accordance with table 2.1. All or part of this footprint area may be used as the absorption area with the remainder used as a reserve area. The amount of absorption area shall be based on the degree of treatment provided to the wastewater, site and soil conditions, and method of dispersal. When septic tank effluent is dispersed a minimum of 50% of the footprint area must be used as an absorption area.

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**Table 2.1: Minimum Footprint Area**

**Square Feet per 100 gallons**

<u>Ksat Cm/day</u>	<u>STE Management Level 1 or 2</u>	<u>STE Management Level 3<sup>1</sup></u>	<u>STE Management Level 4 or 5<sup>1</sup></u>	<u>SE or better Management Level 2</u>	<u>SE or better Management Level 3<sup>1</sup></u>	<u>SE or better Management Level 4 or 5<sup>1</sup></u>
<u>=&gt;16.1</u>	<u>1510</u>	<u>1290</u>	<u>1130</u>	<u>760</u>	<u>640</u>	<u>530</u>
<u>14.1 – 16</u>	<u>1710</u>	<u>1450</u>	<u>1280</u>	<u>850</u>	<u>730</u>	<u>600</u>
<u>12.1 – 14</u>	<u>2000</u>	<u>1700</u>	<u>1500</u>	<u>1000</u>	<u>850</u>	<u>700</u>
<u>10.1 – 12</u>	<u>2380</u>	<u>2020</u>	<u>1780</u>	<u>1190</u>	<u>1010</u>	<u>830</u>
<u>8.1 – 10</u>	<u>2920</u>	<u>2480</u>	<u>2190</u>	<u>1460</u>	<u>1240</u>	<u>1020</u>
<u>6.1 – 8</u>	<u>3670</u>	<u>3120</u>	<u>2750</u>	<u>1840</u>	<u>1560</u>	<u>1290</u>
<u>4.1 – 6</u>	<u>4860</u>	<u>4130</u>	<u>3650</u>	<u>2430</u>	<u>2070</u>	<u>1700</u>
<u>2.1 – 4</u>	<u>6480</u>	<u>5510</u>	<u>4860</u>	<u>3240</u>	<u>2750</u>	<u>2270</u>
<u>0.8 – 2.0</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>5000</u>	<u>5000</u>
<u>0.001 – 0.8</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>*</u> <u>–</u>	<u>*</u> <u>–</u>

1 Uniform distribution (LPD) provides reduction in footprint area for Management Levels 3, 4 & 5 as follows: When the Ksat value is equal to or greater than 12 cm/day, then a 10% reduction can be given. When the Ksat value is less than 12 cm/day, then a 25% reduction can be given. Reduction of the footprint is at the option of the professional engineer.

Model Program Management Level. See the Environmental Protection Agency's document entitled "Draft EPA Guidelines for the Management of Decentralized Wastewater Systems: September 26, 2000". A management program addresses the planning, siting, design, installation, operation, maintenance, performance monitoring, and enforcement (if necessary) of sewage systems. Five model programs are described below:

Management Level 1. Owner owns, operates and maintains sewage system. Owner has awareness of sewage system needs. The Department maintains system inventory list and has awareness of sewerage system maintenance needs. The Department establishes program to remind owner of scheduled preventive maintenance needs.

Management Level 2. Owner owns sewage system but keeps maintenance contract with an Onsite Management Entity (OME) for the life of the system. Owner has specific reporting requirements at regular intervals (determined by the Department) that are obtained from the OME. The Department administers tracking system for maintenance contract compliance.

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Management Level 3. Owner owns sewage system. Operation Permit establishes specific and measurable performance monitoring and reporting requirements from an OME. The Operation Permit is renewed at an interval established by the Department. Requires system inspection at time of Operation Permit renewal.

Management Level 4. Owner owns sewage system. Private or public utility operates and maintains sewage system. The utility is issued the Operation Permit. The Operation Permit establishes specific and measurable performance monitoring and reporting requirements. The Operation Permit may be renewed at an interval established by the Department. Financial, management, and technical audits of the utility occur.

Management Level 5. Private or public utility owns, operates, and maintains the sewage system. All responsibility for the system to work properly is transferred to a professional entity. Financial, management, and technical audits of the utility occur.

E. Recordation. In addition to the requirements of 12 VAC 5-610-700 E, a dedication document duly recorded with the clerk of the circuit court shall be furnished to the department stating that the sewage disposal areas and nutrient dilution areas will be used only for sewage renovation and may not be excavated or used for permanent structures while the mass sewage disposal system is utilized.

F. Review process. In addition to the requirements found in this article, the treatment processes for all systems over 5,000 G.P.D. shall be permitted in accordance with 12 VAC 5-581-270 of the Sewage Collection and Treatment Regulations (SCAT Regulations). The dispersal methodology may be reviewed under either this chapter or the SCAT Regulations, as deemed appropriate by the division.

**12 VAC 5-610-449.1. Site assessment, verification, and monitoring.**

A. Sites shall be evaluated by the criteria in this section based on projected wastewater flows. All site calculations for water mounding and groundwater nitrate evaluation shall be prepared by a Professional Engineer licensed in the Commonwealth of Virginia.

B. Nitrate evaluation. The applicant shall address the prevention of ground water contamination. Documentation shall include, but not be limited to, demonstrating that nitrate-nitrogen concentrations in the groundwater will comply with 9 VAC 25-260-190, et seq., ground water standards promulgated by the Department of Environmental Quality. Background samples from the groundwater shall be collected, analyzed and submitted to the Department prior to approval of the construction permit to determine the required treatment.

1. Dilution areas. Dilution areas, if utilized, shall be adjacent to and down gradient from the mass sewage disposal system and shall be in line with the direction of local ground water flow when known. If the direction of local ground water flow is not known and cannot be readily determined, the regional ground water direction may be used.



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2. Mass balance. Nitrogen calculations shall be based on a mass balance principle. The following equations may be used to determine the minimum dilution area. Hantzsche and Finnemore (1992) mass-balance equation for Nitrogen:

$$A = \frac{0.01344W(N_w - dN_w - N_r)}{R(N_r - N_b)}$$

Where

A = Gross area in Acres

W = Effluent quantity in gallons per day (gpd)

N<sub>w</sub> = Nitrogen concentration in the effluent (mg/l)

d = Nitrogen removal fraction in the soil/plant system (dependent upon the effluent quality and dispersal method)

N<sub>r</sub> = Nitrogen concentration (mg/l) desired in the recharge water (i.e. Discharge limit for Nitrogen)

N<sub>b</sub> = Nitrogen concentration in the rain (mg/l)

R = Amount of rain infiltrated into the ground (inches per acre per year), typically no more than 50% of the average rainfall.

0.01344 = conversion factor.

3. Raw and septic tank effluent from residential dwellings shall be defined to have 90 mg/l of total nitrogen concentration, of which not more than 20% may be assumed to be lost from a septic tank effluent as a result of gaseous losses prior to entering a saturated zone. When secondary treatment with nitrification is provided and the installation depth does not exceed 18 inches, the engineer may assume a 50 % reduction in nitrate nitrogen from gaseous losses, plant uptake, and denitrification combined.

4. No reduction in nitrate-nitrogen loading rate shall be given for reduced water flow. For the purposes of determining ground water nitrate-nitrogen loads from residential dwellings, the engineer may assume a flow as provided in section 670 of this Chapter and an infiltration value of 25% of the rainfall. Higher infiltration rates may be approved by the Department on a case-by-case basis when supporting documentation is provided. Nothing contained in this subsection prevents the use of water saving fixtures.

C. Water mounding evaluation. The applicant shall address the potential for water mounding below the absorption area. The evaluation shall consider the impact of mass sewage disposal systems (proposed or existing) within 1,500 feet of the planned mass sewage disposal system. Data shall be submitted which will demonstrate how a minimum of 24 inches of unsaturated soil or 18 inches with secondary pretreatment will

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be maintained below the trench bottom. The separation distance may be reduced to 12 inches when advanced secondary treatment (BOD and TSS less than 10 mg/L) is provided and to 6 inches when enhanced secondary treatment and disinfection are provided. All water mounding calculations shall use measured hydraulic conductivity readings. However, estimated hydraulic conductivity rates may be used for system designs of 5000 gpd or less when site and soil evaluations and existing geotechnical information are deemed satisfactory by the local health department. Tensiometers may be required by the department to monitor soil moisture below mass sewage disposal systems.

D. Wastewater strength. No effluent stronger than septic tank effluent may be discharged to a mass sewage disposal system. When the wastewater is not from residential units, a professional engineer shall perform a wastewater characterization. When the strength is expected to exceed one or more of the values used to define septic tank effluent (see definitions in 12 VAC 5-610-120), pretreatment shall be provided to reduce the wastewater strength below the values for septic tank effluent.

E. Geotechnical evaluation. When flows exceed 5,000 G.P.D., all proposals for mass drainfield systems shall include boring logs and other geophysical data, collected from the absorption area or other appropriate locations, sufficient to characterize the aquifer and vadose zone in terms of depth, thickness, transmissivity, and relationship to other nearby uses of ground and surface water. Such information shall include but not be limited to geologic, soils and hydrologic maps and reports produced by the United States Geologic Survey; the Virginia Department of Mines, Minerals and Energy; and the Natural Resources Conservation Service.

F. System performance. An operation and maintenance manual shall be submitted to and approved by the Department prior to the issuance of the operation permit. All mass sewage disposal systems over 5000 gpd shall have a certified wastewater treatment plant operator one class higher than that indicated for discharging systems in the *Sewage Collection and Treatment Regulations*. Systems 5000 gpd or less shall have at least a Class IV operator. Operation, maintenance and monitoring are the responsibility of the system owner. Effluent samples shall be collected at a point after the last engineered treatment process and before entering the absorption field.

1. Frequency. Unless determined by the Division, sampling shall be in accordance with table 2.2.

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**Table 2.2**  
**Sampling Schedule for Mass Sewage Disposal Systems<sup>1</sup>**

<u>Plant Size</u>		<u>&gt;100,000</u> <u>gpd</u>	<u>40,001-100,000</u> <u>gpd</u>	<u>5001- 40,000</u> <u>gpd</u>	<u>&gt;750 – 5000</u> <u>gpd</u>
<u>Test Name</u>	<u>Sample Point</u>	<u>Sample Type and Collection Frequency</u>			
<u>Flow</u>	<u>Effluent</u>	<u>Totalizing,</u> <u>Indicating, and</u> <u>Recording</u> <u>Equipment</u>	<u>Totalizing,</u> <u>Indicating, and</u> <u>Recording</u> <u>Equipment</u>	<u>Totalizing</u> <u>Meter</u> <u>Or</u> <u>Pump Counter</u>	<u>Totalizing</u> <u>Meter</u> <u>Or</u> <u>Pump Counter</u>
<u>BOD<sub>5</sub></u>	<u>Effluent</u>	<u>24 HC</u> <u>3 days/week</u>	<u>8 HC</u> <u>1/week</u>	<u>4 HC</u> <u>1/month</u>	<u>Grab</u> <u>2/year</u>
<u>Total</u> <u>Suspended</u> <u>Solids</u>	<u>Effluent</u>	<u>24 HC</u> <u>3 days/week</u>	<u>8 HC</u> <u>1/week</u>	<u>4 HC</u> <u>1/month</u>	<u>Grab</u> <u>2/year</u>
<u>Total</u> <u>Residual</u> <u>Chlorine<sup>2</sup></u>	<u>Effluent</u>	<u>3/day at 4 Hr.</u> <u>Intervals</u>	<u>3/day at 4 Hr.</u> <u>Intervals</u>	<u>3/day at 4 Hr.</u> <u>Intervals</u>	<u>Grab</u> <u>1/month</u>
<u>Fecal</u> <u>Coliform</u>	<u>Effluent</u>	<u>Grab</u> <u>3 days/week</u>	<u>Grab</u> <u>3 days/week</u>	<u>Grab</u> <u>1/week</u>	<u>Grab</u> <u>1/month</u>
<u>PH, DO</u>	<u>Effluent</u>	<u>Grab</u> <u>1/day</u>	<u>Grab</u> <u>1/day</u>	<u>Grab</u> <u>1/day</u>	<u>Grab</u> <u>1/month</u>
<u>Nitrogen</u>	<u>Effluent</u>	<u>8 HC</u> <u>2 days/month</u>	<u>8 HC</u> <u>1 month</u>	<u>4 HC</u> <u>1/month</u>	<u>Grab</u> <u>4/year</u>

HC – Hours Composite

<sup>1</sup>Operation Permit will indicate which of the tests are required and the effluent limit.

<sup>2</sup>If required. When an alternative disinfection process is used, methods of testing shall be approved by the Department on a case by case basis.

2. Responsibility for sampling. The owner of the mass sewage disposal system shall be responsible for assuring that all samples are collected, analyzed, and reported to the department in accordance with this chapter. All laboratory tests shall be conducted in accordance with the most recent edition of *Standard Methods for the Examination of Water and Wastewater* (American Public Health Association).
3. Reporting. All effluent sample results shall be reported to the Department by the 15th or the first subsequent business day if the 15th falls on a weekend or holiday, of the month following the month the samples were collected. Results shall be submitted on a form approved by the Division. The owner shall submit a yearly operational report, signed by the certified wastewater treatment plant operator to the Department. This report shall be on a form approved by the Division and due each year beginning one year from the date of the operation permit. This report shall

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include but not be limited to a summary of the performance of the wastewater treatment facility and any recommended maintenance items.

**12 VAC 5-610-490. Characteristics of soils that determine suitability.**

D. Soil restrictions. A soil restriction is a feature in the soil that impedes the percolation of water. Restrictions generally consist of a layer or horizon within a soil that is firmly compacted or is very rich in clay. Soils containing restrictions may require verification of the ~~percolation~~ permeability rate, ~~by percolation tests.~~ Examples of restrictions are listed below.

1. Pans. The term pans include hard pans, fragipans, clay pans, plowpans, traffic pans, iron pans, and plinthic horizons.

~~2. Stoniness. The term stoniness pertains to the relative proportions of stones present in a soil. Stoniness reduces the soil volume for absorption, and therefore, may require a larger subsurface soil absorption field than would be indicated by soil texture.~~

[G. Rock Fragments as a Limiting FactorSystems Dispersing Septic Tank Effluent.

In order to assure effluent dispersal, a minimum of 18 inches of suitable soil below the trench bottom must be present and may contain up to 60% rock fragments by volume. The soil materials in the 18-inch zone must have a texture of loamy sand or finer. If the soil materials are sand, then a minimum 3-foot horizon of sand, with up to 60% rock fragments, must be present below the trench bottom.

Soil horizons below the trench bottom that have greater than 60% rock fragments by volume may be considered if the thickness of the high-rock content horizons is a minimum of 5 feet and the soil materials have a texture of loamy sand or finer.

Systems Dispersing Secondary Or Better Effluent.

In order to assure effluent dispersal, a minimum of 12 inches of suitable soil below the trench bottom must be present and may contain up to 60% rock fragments by volume. The soil materials in the 12-inch zone must have a texture of loamy sand or finer. If the soil materials are sand, then a minimum 2-foot horizon of sand, with up to 60% rock fragments, must be present below the trench bottom.

Soil horizons below the trench bottom that have greater than 60% rock fragments by volume may be considered if the thickness of the high-rock content horizons is a minimum of 3 feet and the soil materials have a texture of loamy sand or finer.